

Continuous Flow Deposition System

Abstract

An atomic layer deposition system is described that includes a deposition chamber. A first and second reaction chamber are positioned in the deposition chamber and contain a first and a second reactant species, respectively. A monolayer of the first reactant species is deposited on a substrate passing through the first reaction chamber. A monolayer of the second reactant species is deposited on a substrate passing through the second reaction chamber. A transport mechanism transports a substrate in a path through the first reaction chamber and through the second reaction chamber, thereby depositing a film on the substrate by atomic layer deposition. The shape of the first and the second reaction chambers are chosen to achieve a constant exposure of the substrate to reactant species when the transport mechanism transports the substrate in the path through the respective reaction chambers at the constant transport rate.